Approved for Release: 2018/12/18 C06773004

Directorate of Intelligence

~~Secret~~

(b)(3)

0047633
N-NESAR89-018
11AUGUST1989

0341-0342

NESA PRODUCTION OFFICER

(b)(3)

Near East and South Asia Review (U)

11 August 1989

RECEIVED 6 SEPTEMBER

~~Secret~~

NESA NESAR 89-018
11 August 1989
Copy 342

Approved for Release: 2018/12/18 C06773004

Approved for Release: 2018/12/18 C06773004

Warning Notice	Intelligence Sources or Methods Involved (WNINTEL)
National Security Information	Unauthorized Disclosure Subject to Criminal Sanctions

Dissemination Control Abbreviations		
	NOFORN (NF)	Not releasable to foreign nationals
	NOCONTRACT (NC)	Not releasable to contractors or contractor/consultants
	PROPIN (PR)	Caution—proprietary information involved
	ORCON (OC)	Dissemination and extraction of information controlled by originator
	REL...	This information has been authorized for release to...
	WN	WNINTEL—Intelligence sources or methods involved

A microfiche copy of this document is available from OIR/DLB [redacted] Regular receipt of DI reports can be arranged through CPAS/IMC.

(b)(3)
(b)(3)

All material on this page is Unclassified.

Approved for Release: 2018/12/18 C06773004

Approved for Release: 2018/12/18 C06773004

(b)(3)

NR Record

Iraq: Development of AWACS and Airborne Early Warning Programs 53

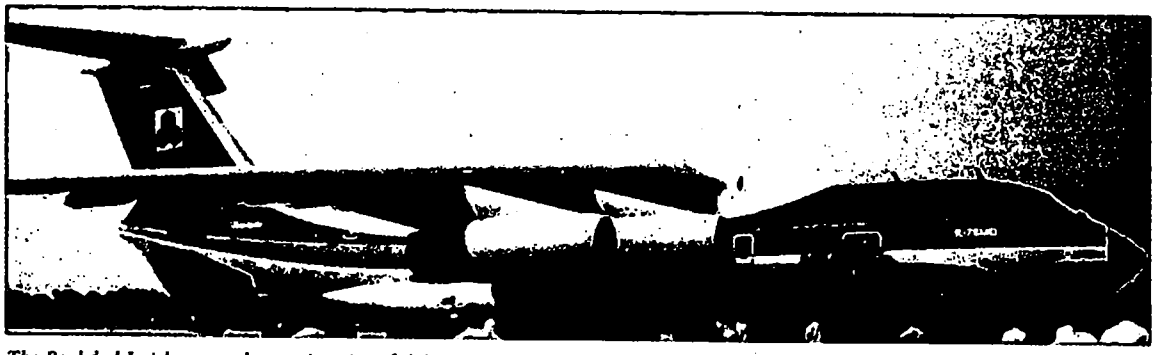
(b)(3)
(b)(3)

Weaknesses in Iraqi air defenses exposed during the war with Iran and fear of Israeli airstrikes have prompted Baghdad to begin development of airborne early warning and airborne warning and control system aircraft. The Iraqi defense industry has made impressive progress toward these goals, but considerable technical obstacles remain.

(b)(3)

Approved for Release: 2018/12/18 C06773004

Approved for Release: 2018/12/18 C06773004



The Baghdad I airborne early warning aircraft (U)

(b)(3)

Approved for Release: 2018/12/18 C06773004

Approved for Release: 2018/12/18 C06773004

(b)(3)

Iraq: Development of AWACS and Airborne Early Warning Programs

Iraq is developing at least two versions of airborne early warning (AEW) aircraft and is probably attempting to develop an airborne warning and control system (AWACS) capability as well. During the war with Iran, Iraqi strategic air defenses were often porous and ineffective because of gaps in radar coverage and terrain obstructions that allowed Iranian aircraft to approach Iraqi airspace undetected. In response, Baghdad has embarked on a determined effort to expand and enhance its air defenses.

(b)(3)

Status of the Program

The initial Iraqi AEW platform was unveiled at the Baghdad International Exhibition for Military Production in April. Named the Baghdad I, the plane is a modified IL-76 MD jet transport with a radome mounted under the aft section of the fuselage.

(b)(1)
(b)(3)

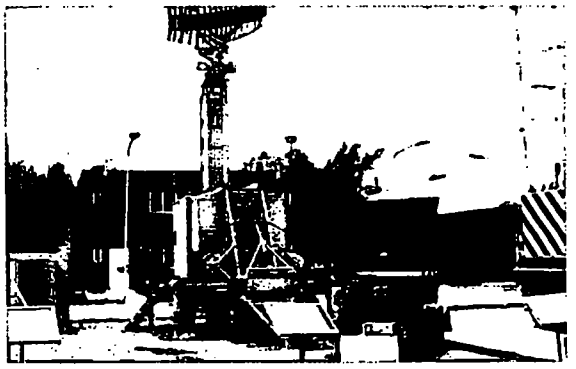
the plane is divided into three sections, each responsible for one of the plane's intelligence collection functions. An ELINT section monitors the plane's electronic warfare support measures pod—a French Syrel system that supplements the radar by acquiring targets through electronic signals. A COMINT section provides communications intercepts and a voice link to ground stations and other aircraft. The AEW section handles the plane's French-built TRS 2106 Tiger G radar.

(b)(3)

The standard Tiger G is a ground-based air defense acquisition radar designed for low-altitude coverage and used primarily to supplement radars with greater reach. It operates on a frequency band of 550 MHz in G band and is highly resistant to electronic countermeasures. The Tiger G is a good low-altitude radar, but we believe its effectiveness will be significantly limited on an airborne platform. The

(b)(1)
(b)(3)

Iraqis have attempted to modify the Tiger G for airborne use and that French engineers were "astonished" by Iraqi technical skill in doing so. Nevertheless, we doubt that



The TRS 2106 Tiger G radar—shown here in its standard, ground-based version—which the Iraqis have modified for use in AEW aircraft

(b)(3)

a modified radar can perform as effectively in this role as a system specifically designed for an airborne platform.

(b)(3)

Another problem that we believe will curtail the usefulness of this system is a result of the awkward placement of the radar beneath the aft fuselage. The Iraqis had hoped to give the aircraft a look-down capability by capitalizing on the pulse-Doppler aspect of the Tiger G, but

(b)(1)
(b)(3)

to do this they were forced to mount the radar upside down in the tail radome. This design feature affords the system good radar coverage behind and beneath the aircraft, but the body of the plane blocks forward or overhead coverage. This arrangement considerably limits the usefulness of the system, especially for providing airborne threat warning to aircraft performing strike missions.

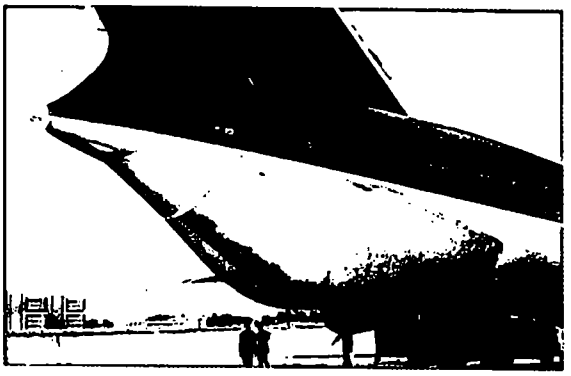
(b)(3)

(b)(1)
(b)(3)

Iraq had originally intended to build the aircraft with a top-mounted dish radome, like the US AWACS and Soviet A-50 Mainstay, which would have allowed all-around

Approved for Release: 2018/12/18 C06773004

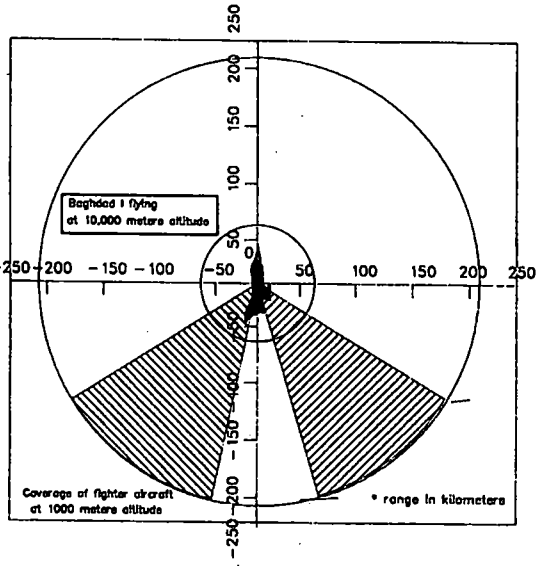
Approved for Release: 2018/12/18 C06773004



(b)(3)

The tail randome of the Baghdad I

Estimated Radar Coverage
of Baghdad I AEW Aircraft*



(b)(3)

coverage. This approach had to be temporarily shelved, however, after an early prototype had its dish ripped off in flight. We believe Baghdad adopted the tail-mounted radome as an interim measure in response to this initial failure. The early structural problems with dish radomes have apparently been solved, as the Iraqi press announced on 3 July that an "AWACS" aircraft with a rotating dish radome, the Adnan I, had successfully completed its initial testing.

(b)(3)

(b)(1)
(b)(3)

According to the official announcement, this plane—

–has the ability "to monitor fighter planes at all altitudes, even low ones."

(b)(1)
(b)(3)

but the top-mounted dish radome probably provides far greater coverage than the tail radome of the Baghdad I because of the 360-degree field of vision it allows.

(b)(3)

Although both planes have voice and data links to ground stations and voice communication with other aircraft, it is unlikely that either has air-to-air data links for efficient, real-time command and control, which allow a true AWACS capability. Furthermore, we do not believe Iraqi fighters, including the new MiG-29 Fulcrums, have been equipped with air-to-air data links that would allow them to receive information transmitted directly by an Iraqi AWACS. Instead, the data would have to be transmitted to a ground station and then retransmitted to the fighters, creating a delay unacceptable in combat. Consequently, neither the Baghdad I nor the Adnan I would be effective in an AWACS role, making it most likely that both will serve primarily as airborne warning platforms in the near term.

(b)(3)

(b)(1)
(b)(3)

The Iraqis probably had great difficulty adapting the Tiger G for airborne use and may have been forced to request French assistance. In our judgment, the AEW/AWACS programs are still in the developmental stage, and it will be some time before they become fully operational.

(b)(3)

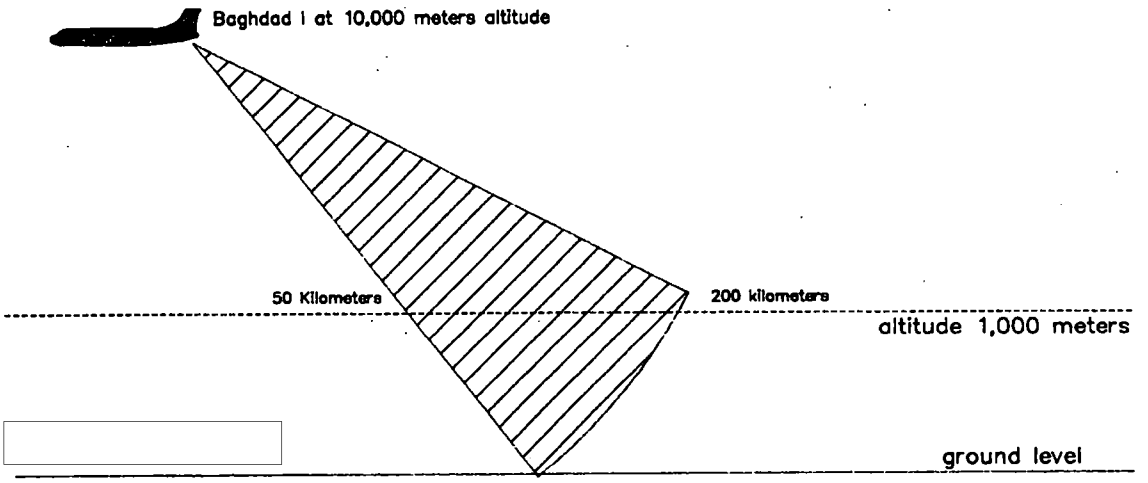
Iraqi Motivation

The decision to develop an indigenous AEW/AWACS program was made during the war with Iran in response to flaws in Iraqi air defenses.

Approved for Release: 2018/12/18 C06773004

Approved for Release: 2018/12/18 C06773004

Cross-section of Baghdad I Radar Cone



(b)(3)

Gaps in Iraqi radar coverage made possible the embarrassing, though militarily inconsequential, Iranian air raids on Baghdad. Similarly, the mountainous terrain of western Iran further complicated the defense of Iraqi airspace by masking approaching Iranian aircraft from ground-based radar. (b)(1) (b)(3) Iraq is also concerned about a repeat of the 1981 Israeli airstrike that left the Iraqi nuclear program in shambles. (b)(3)

Although the Baghdad I and Adnan I are limited in their capabilities, they represent a considerable achievement for the growing Iraqi military-industrial complex. We believe Baghdad chose to develop an indigenous aircraft instead of attempting to buy a foreign plane, such as the Soviet A-50, to further strengthen Iraq's growing military industry, making it less reliant on foreign powers and more attractive as a military supplier to other Third World nations. The unveiling of the Baghdad I at the Iraqi arms show—in the midst of Israeli press disclosures concerning the status of the Iraqi chemical and nuclear programs—was probably intended as a message to Israel that a repeat of the 1981 raid will be a difficult undertaking. The announcement of the Adnan I's successful testing—coming just after Iranian leader Rafsanjani's trip to Moscow— suggests that Baghdad was probably attempting to remind the USSR that Iran is not the only important power in the region. (b)(3)

Outlook

Iraq's AEW/AWACS program is likely to retain its high priority status. The Iraqis almost certainly will attempt to develop their own data links for a true

Approved for Release: 2018/12/18 C06773004

Approved for Release: 2018/12/18 C06773004

AWACS, or alternatively might try to purchase them from the USSR or Western Europe. Given the technical hurdles, however, we do not expect Iraq to field a functioning AWACS before the mid-1990s. In the interim, Iraqi AEW aircraft are likely to become operational and will bolster Iraqi air defenses. (b)(3)

Iraq will probably deploy its AEW aircraft to cover the considerable gaps in radar coverage in western Iraq, the most likely direction of an Israeli attack. Simultaneously, they will probably be used to monitor Iranian activity in the east in conjunction with the extensive ground-based radar net deployed along the border. AEW aircraft may also be used to help coordinate fighter cover over Iraqi airspace. (b)(3)

(b)(3)

Approved for Release: 2018/12/18 C06773004